

REMARKS

Claims 1-6, 9-21, 24-37, 40-52, and 55-66 are now pending in the application. Independent Claims 1, 17, 32 and 47 and dependent Claim 63 have been amended to more particularly point out and distinctly claim the present invention. Support for these amendments is found throughout the Applicants' specification as originally filed, including at Paragraphs 20, 22, 30, and 34, for example. Dependent Claims 9, 11-12, 24-27, 40-43, and 55-57 have been amended to modify dependencies based on the cancellation of claims discussed above. These minor amendments should not be considered to be narrowing as to the scope of the claims. The Examiner is respectfully requested to reconsider and withdraw the rejection(s) in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 103

Claims 1-14 and 17-29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hoffman, Jr. et al. (U.S. Pat. No. 6,264,823) in view of Madono (U.S. Pat. No. 4,584,328). Claims 15-16 and 30-31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hoffman, Jr. et al. (U.S. Pat. No. 6,264,823) in view of Madono (U.S. Pat. No. 4,584,328) and further in view of Johnson et al. (U.S. Patent No. 5,126,089). Claims 32-66 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Johnson et al. (U.S. Pat. No. 5,126,089) in view of Madono (U.S. Pat. No. 4,584,328) and further in view of Hoffman, Jr. et al. (U.S. Pat. No. 6,264,823). These rejections are respectfully traversed.

Independent Claims 1, 17, 32, and 47 have been amended to recite common features, including that the apparatus has a power source with electrodes and further are adapted to handle electrolyte. Further, the claims have been amended to recite a casting material that comprises an ionic compound that promotes disintegration of the casting material when in the presence of an electrolyte. Applicants note that Claims 7-8, 22-23, 38-39, and 53-54 have been cancelled. Applicants respectfully submit that none of the cited references have any disclosure, suggestion, or motivation to arrive at each and every limitation of the claimed invention, as recited in Claims 1, 17, 32, or 47, or their dependent Claims 2-6, 9-16, 18-21, 24-31, 33-37, 40-46, and 48-52, and 55-66.

The Hoffman reference discloses an electrolytic parts cleaner, however, it has no disclosure of using the devices or methods to electrolytically clean a cast part having a residual casting material. There is no suggestion or motivation in Hoffman to employ the disclosed electrolytic cleaning devices to remove residual casting material from a cast metal part. The Hoffman reference only discloses electrolytically cleaning conductive bodies to remove thin coatings, for example, rust, scale, smut, petroleum derived contaminants, oils, greases, flux, carbonization, paint, dirt, and the like. Col. 1, lines 29-34, for example. There is no objective teaching or suggestion in Hoffman that such a device would be suitable for removing substantial and thick materials, such as residual casting materials remaining on a cast part. As recognized by one of skill in the art, there is a fundamental difference between thin layers of rust, smut, paint, and grease and a thick ceramic-like solid casting material. Moreover, Hoffman is not only silent with regard to casting materials, but provides no suggestion or motivation to include a disintegration additive comprising an ionic compound that enables effective removal of any layer, nonetheless the residual casting material from a cast part, as is

generally recited in Claims 1, 17, 32, and 47 and Claims 2-6, 9-16, 18-21, 24-31, 33-37, 40-46, and 55-60 which respectively depend thereupon.

Further, Applicants note that Claim 32 has casting material that comprises a disintegration additive consisting essentially of an ionic compound that promotes disintegration of the casting material when in the presence of an electrolyte, wherein a portion of the casting material remains on the part after casting. Neither Hoffman nor any of the other cited references discloses or suggests a disintegration additive that consists essentially of an ionic compound.

The Madono reference does not account for the deficiencies of the Hoffman reference. Madono has no disclosure or suggestion to provide a disintegration additive that comprises an ionic compound that promotes disintegration of a casting material in the presence of an electrolyte and an applied voltage. Further, Madono has no disclosure or suggestion of any electrolytic processing whatsoever, thus there is no disclosure, suggestion, or motivation to provide an electrolytic processing system to remove residual casting materials from metal parts. The Modano provides no disclosure, suggestion, or motivation to one of skill in the art to select a material that is an ionizable disintegration additive that facilitates ion mobility in the presence of an electrolyte, such as water, to promote disintegration of the casting material.

Absent impermissible hindsight, one of skill in the art would have no reason or motivation to select plastic encapsulated materials, such as those disclosed in Madono for use in an electrolytic cleaning apparatus, particularly one that operates by interaction of the additive with an electrolyte. Hence, neither the Hoffman reference, nor the Modano reference, either singly or in combination, provides any objective disclosure, motivation or suggestion to arrive at an apparatus or system having a power source with

electrodes operable to contact an electrolyte, and a holder to secure a cast metal part having a residual casting material that includes a disintegration additive comprising an ionic compound that promotes disintegration of the casting material, when in the presence of the electrolyte.

The Johnson reference provides no disclosure or suggestion whatsoever for modifying a casting material to include a disintegration additive that can promote disintegration in the presence of an electrolyte. Rather, the Johnson reference relates to the use of steam (atmosphere having 80 – 100% relative humidity) to break down binder resin to achieve the breakdown of the casting cores. In fact, the main objective and teaching of the Johnson reference relates to breaking down the binder of the casting material. See e.g., Abstract, Col. 1 lines 29-31, Col. 3 lines 4-5, Col. 4 lines 34-35. The Johnson reference provides no motivation or suggestion to arrive at the presently claimed invention that includes a casting material that contains a disintegration additive comprising an ionic compound that promotes disintegration of the casting material in the presence of an electrolyte.

Applicants respectfully maintain that the motivation to combine the cited references cannot come from the Applicants' own disclosure, but rather must originate from the references themselves. *In re Vaeck*, 20 USPQ.2d 1438 (Fed. Cir. 1991). There is nothing in Modano, Hoffman, or Johnson that would motivate the skilled artisan to make such a combination without the impermissible benefit of hindsight. Since the references do not support the teachings necessary to arrive at the presently amended claims, they thus fail to establish *prima facie* obviousness. As such, Applicants respectfully submit that none of Hoffman, Modano, or Johnson, either alone or in combination with one another, provides the necessary disclosure, suggestion, or

motivation to arrive at the invention as claimed recited in Claims 1, 17, 32, or 47, or their dependent Claims 2-6, 9-16, 18-21, 24-31, 33-37, 40-46, and 48-52, and 55-66. Applicants respectfully request reconsideration of the claims and prompt allowance thereof.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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